



**CLEAN COPY VERSION (AS AMENDED 3/19/03)
(TWICE AMENDED) PLANT PATENT
[File No. 10451.0016.NPUS00]**

TECH CENTER 1600/2900

APR 09 2003

RECEIVED

APPLICATION FOR UNITED STATES PLANT PATENT

for

CHRYSANTHEMUM PLANT NAMED 'VULCAN TIME'

by

**Mark Roland Boeder, Courts Haugh, Rookwood Lane, West Wittering, PO20 8QH,
United Kingdom**

EXPRESS MAIL MAILING LABEL NUMBER:

DATE OF DEPOSIT:

I hereby certify that this paper or fee is being deposited with the United States Postal Service "EXPRESS MAIL POST OFFICE TO ADDRESSEE" service under 37 C.F.R. 1.10 on the date indicated above and is addressed to: Commissioner for Patents, Washington D.C. 20231.

Beverly A. Lee

LATIN NAME OF THE GENUS AND SPECIES

Botanical classification: *Dendranthema grandiflora*.

VARIETY DENOMINATION

The new Chrysanthemum variety denomination is 'Vulcan Time.'

BACKGROUND OF THE INVENTION

The present invention comprises a new and distinct cultivar of Chrysanthemum botanically known as *Dendranthema grandiflora*, and referred to by the cultivar name 'Vulcan Time.'

'Vulcan Time,' identified as 20247-0, originated from a cross made by Mark R. Boeder in a controlled breeding program at Chichester, West Sussex, United Kingdom. The female parent of the new variety is an undistributed, unpatented seedling identified as P551B2 and the male parent is the undistributed, unpatented seedling identified as P341B7. The new variety 'Vulcan Time' has been asexually reproduced by vegetative cuttings at Chichester, West Sussex, United Kingdom and the distinguishing characteristics are retained through successive generations of asexual reproduction.

BRIEF SUMMARY OF THE INVENTION

'Vulcan Time' is a pot type of Chrysanthemum plant, having a flat capitulum form and red single type flowers.

Comparison with Parent

Plants of the new Chrysanthemum variety 'Vulcan Time' are similar to the parent seedling P341B7 in plant habitat and growth rate. In side-by-side comparisons at Chichester, West Sussex, United Kingdom, under commercial practice, plants of the new Chrysanthemum variety 'Vulcan Time' differed from plants of the parent seedling P341B7 in the following characteristics.

1. The new variety 'Vulcan Time' produces paler red flowers whereas the parent seedling P341B7 produces dark red flowers.

2. Plants of the new variety 'Vulcan Time' have a faster response time than plants of the parent seedling P341B7.
3. Plants of the new variety 'Vulcan Time' have paler green foliage than plants of the parent seedling P341B7.

5

Comparison with Other Varieties

Plants of the new Chrysanthemum variety 'Vulcan Time' are similar to the cultivar 'Rage' (U.S. Plant Patent No. 8,770) in plant habitat and growth rate. However, in side-by-side comparisons at Chichester, West Sussex, United Kingdom, under commercial practice, plants of the new Chrysanthemum variety 'Vulcan Time' differed from plants of the cultivar 'Rage' in the following characteristics.

10

1. Plants of the new variety 'Vulcan Time' have a faster response time than plants of the variety 'Rage.'
2. Plants of the new variety 'Vulcan Time' have larger flowers than plants of the cultivar 'Rage.'

15

BRIEF DESCRIPTION OF ILLUSTRATIONS

Figure 1 is a whole plant view of the new variety 'Vulcan Time' grown in a pot. The colors shown are as true as possible within the usual limits of this kind of illustration. The plant shown in the illustration is 60 days from the start of Short Days.

DETAILED BOTANICAL DESCRIPTION

20

The following description of the new Chrysanthemum variety 'Vulcan Time' is of plants grown a greenhouse at Chichester, West Sussex, United Kingdom in the month of June. The cultivar has not been observed under all possible environmental conditions. The phenotype may vary significantly with variations in the environment such as temperature, length of day and light intensity, without any variance in genotype. The commercial classification of the new variety is a pot Chrysanthemum.

25

Plants of the new variety have been grown successfully under temperature conditions averaging about 18°C at night and about 24°C to 25°C during the day under light conditions of about 5,000 to 6,000 foot candles. The plants respond well to the use of growth retardant, such as three B9 treatments at about 2500 ppm. To produce a

commercial product the plants may be pinched once. The typical container size for commercial growth is 14 cm. It has been observed that the shelf life of the new variety is about 21 days with a response time of about 8 weeks. The new variety is suitable for growth in a temperature range of 15°C to 25°C.

- 5 The following description is with respect to a plant produced as a pot Chrysanthemum. In the description of this new Chrysanthemum variety, color values have been taken from the Royal Horticultural Society Colour Chart (R.H.S.C.C.).

Plant.

- Plant type: pot
- 10 Habit: upright and branching
- Height: 26 cm
- Width: 32 cm
- Branching characteristics (describe): free and spreading
- Length of Lateral Branches: 13-17 cm
- 15 Number of Breaks from Pinch: 4-6
- Stem Color: near 137B
- Response Time: near 56 days
- Vigor: medium
- Shelf Life: near 21 days
- 20 Disease (susceptibility or resistance): none observed
- Pest (resistance or susceptibility): none observed
- Growth retardant type and treatment: 3 applications of 2.5 gram/litre at 2 days, 21 days and 28 days after sticking of unrooted cuttings
- The plants were grown for two weeks in Long Day conditions (20 hours of light) and
- 25 then transferred to Short Day conditions (13 hours of dark).
- Propagation:

Type: vegetative propagation via stem cuttings

Time to rooting: 12-14 days with soil temperatures of 18°C

Rooting habit: fine and fibrous

Foliage

5 Number of Leaves Per Lateral Branch: 9-12

Compound or single: single

Arrangement of Leaves: alternate

Shape of Leaf: typically 5 lobed, ovate

Size of Leaf: *Width* (cm): near 4-6 *Length* (cm): near 6-10

10 Leaf Apex: acute

Base: obtuse

Attachment: petioled

Aspect: slight undulating

Margin: palmately lobed

15 Surface characteristics: *Top:* slightly pubescent

Bottom: pubescent

Petiole: *Color:* near 137B

Length: near 2.5 cm

Venation: net prominent midvein at under side

20 *Color: upper side:* near 144B

under side: near 144B

Color: Mature Leaf, *upper side:* near 137B; *under side:* near 138B

Young Leaf, *upper side:* near 137A; *under side:* near 137C

Flower

25 Flower type: single

Number of blossoms per branch: 3-5

Inflorescence form: pyramidal

Depth of fully expanded blossoms: near 2.0 cm

Diameter of fully expanded blossoms: 6-8 cm

5 Phyllaries:

Number: 20-25

Color: near 137B

Length: 0.7-1.2 cm

Width: 0.2-0.3 cm

10 *Texture/Appearance:* pubescent

Pedicle length is more or less equal over all flowers and between 4.5 and 5.5 cm

Length: 4.5-5.5 cm

Color: near 137B

Surface: pubescent

15 *Habit:* slightly undulating

Strength: medium

Ray florets:

Form/Shape: straight

Texture/Appearance: matte

20 *Number per flower:* 35-45

Length: 3.5-4.5 cm; *Width:* 0.6-1.0 cm

Apex: rounded or dentate

Base: tapered

Margin: entire

25 Disc florets:

Form/Shape: cylindrical

Texture/Appearance: shiny

Number per flower: 170-250

Length: near 0.4-0.6 cm; *Width:* <0.1 cm

30 *Diameter of disc:* 1.0-1.4 cm

Fragrance: faint

Flower Bud (at onset of color):

Length: near 0.8 cm

Diameter: near 1.1 cm

35 *Form/shape:* globular

General flower color:

1. Ray florets, *upper side*:
Immature: near 46A
Mature: near 45B
5 *Older/Fading*: near 44B
2. Ray florets, *under side*:
Immature: near 33C
Mature: near 33C
Older/Fading: near 33D
- 10 3. Disc florets:
Immature: near 151B
Mature: near 6A
Older/Fading: near 6A
4. Bud: near 138B
- 15 Flower progression with age: Flowers fading from red to bronze/orange with age.

Reproductive Organs

Gynoecium: Present on both Ray and Disc florets

- 20 *Pistil number on Ray florets*: 30
Pistil number on Disc florets: 150
Stigma color: near 6C
Stigma shape: forked
Style color: near 6C
25 *Style length on Ray florets*: near 0.4 cm
Style length on Disc florets: near 0.1 cm

Androecium: Present on Disc florets only

- 30 *Anther number*: 135
Anther shape: clubbed
Anther color: near 150C
Pollen quantity: average
Pollen color: 14B

- 35 Fruit and Seeds: none observed